UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,260	07/08/2003	Chi-Kong Tse	007198-532	5968

21839 7590 04/03/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404	EXAMINER
	POLTORAK, PIOTR

ART UNIT	PAPER NUMBER
2134	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

		Application No.	Applicant(s)
Office Action Summary		10/614,260	TSE ET AL.
		Examiner	Art Unit
		Peter Poltorak	2134

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 July 2003</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-34</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-34</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>11/17/03</u>.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claims 1-34 have been examined.

Oath/Declaration

The oath or declaration is defective because: it does not identify the mailing

address of each inventor. The oath or declaration submitted on 7/8/03 includes c/o (a

department in) a university in China with no corresponding address. A mailing address

is an address at which an inventor customarily receives his or her mail and may be

either a home or business address. The mailing address should include the ZIP Code

designation. The mailing address may be provided in an application data sheet or a

supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Claim Objections

Claim 25 is objected because "each of said M chaotic having a chaotic correspond to

..." should read "each of said M chaotic having a chaotic correspond<u>s</u> to ...".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

The claimed invention is directed to non-statutory subject matter. Claims 1, 8 and 13

are directed towards a mathematical computation with no final, <u>usable</u>, result produced.

In other words, even though a chaotic signal is generated in claim 8 for example, the

signal, as recited in the claimed language, does not have any concrete use associated

with it.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention.

Claims 1 as recited suggests that a receiver used in a transmitting and receiving a digital message method must be a receiver storing chaotic value of "all of the chaotic signal generators". The term "the chaotic signal generators" is rejected with 35 USC lacks antecedent basis. However, if the term was to recite "chaotic signal generator" it is not clear how one would ensure a receiver to store values of all chaotic signal generators, not to mention how one would retrieve and ensure that the set of signals kept on the receiver would not miss even one chaotic signal generator.

"A bit period" recited in claims 1, 3-5, 8-10, 13, 15, 18, 20-22, 25-27, 30 and 32 is not understood especially since a value of a bit is transmitted within a bit period. Thus, it is not clear whether the language underlines the fact that each bit is transmitted, whether time is counted in bits or whether there should be some other interpretation of the term used in claims.

The claimed limitations in claims 1, 8 and 13 do not correspond to preambles of these claims.

It is not clear what constitute "transmitting and receiving a digital message" in steps recited in the claim limitations (the body of the claim) in claim 1 and according to preamble, claim 8 is directed towards transmitting a value k but the body of the language is directed towards selecting a signal generator and generating a chaotic signal.

Claim 13 is directed towards receiving a value k. However, it is not clear whether demodulating a chaotic signal (recited in the last two lines of claim 13) should consider as receiving (and if so, what is the relationship to other steps of claim 13) or whether all the steps of claim 13 read on steps of receiving a value k (and is so what is the connection between the previous steps, e.g. "inputing a random number.." inputing the first chaotic number... ", etc. and the value k the receiving of which, the method of claim 9 supposedly discloses. In fact claim limitations do not address receiving and/or sending a value of k).

Applicant should ensure that a preamble of each claim clearly defines claimed subject and that it clearly corresponds to limitations recited in the claim's body.
Appropriate correction is required.

Claims 2, 6-7, 11-12, 14, 16-17, 19, 23-24, 28-29, 31 and 34 are rejected by virtue of their dependence.

Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 8-9, 11, 13, 16, 18, 23, 25-26, 30 and 33 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Cong (Ling Cong and Sun Songgeng, "Chaotic Frequency

Hopping Sequences", IEEE Transacions on communication s, Vol. 46, No. 11, Nov.

1998).

Cong discloses frequency hopping system for jamming prevention (Cong, 1433,

"Introduction").

As per claims 1, 8-9, 13, 18, 25-26, 30, Cong discloses receiving the value k in a

system for transmitting and receiving a digital message having N digits, each of said N

digits having any one of M values, and wherein each of said M values k corresponds

with a $k.sup.th$-chaotic signal generator having chaotic characteristic value associating

with a chaotic algorithm to generate a chaotic signal, said chaotic signal being

transmitted within a bit period comprising a series of number generated by the step of:

a) inputting a random number to the chaotic algorithm to generate a first chaotic

number; b) inputting the first chaotic number to the chaotic algorithm to generate a

second chaotic number; and c) repeating step b) using the second chaotic number as

the first chaotic number until all numbers to be transmitted within the bit period are

generated, including the step of receiving the chaotic signal at a receiver storing the

chaotic characteristic values of all of the chaotic signal generators and a demodulating

algorithm, and demodulating the chaotic signal to generate the transmitted value k

(Cong pg. 1433-1435, in particular "Digital Hardware Implementation" including Fig. 1).

Demodulating the chaotic signal by a receiver to generate the transmitted value k

is implicit. The demodulating process on the receiver side is an inverse of the process

implemented by the sender and these two must correspond to each other, or there

would be no reason for communicating values from a sender to a receiver because the

values would be meaningless to the receiver. Also, a signal received by a receiver and

act upon reads on a storing the signal by a receiver. In order to process the signal, the

receiver must store the signal at least in a processor and memory.

As per claims 11, 16, 23 and 33, Cong discloses two values: 0 and 1 (Cong, pg.

1434, "Digital Hardware Implementation"). However, the examiner points out that even

if Cong did not disclose each digit has a value of either 0 or 1, it would have been

obvious to one of ordinary skill in the art at the time of applicant's invention to

incorporate such a variation given the fact that computers operate using binary numbers

(0/1).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Peter Poltorak whose telephone number is (571) 272-

3840. The examiner can normally be reached Monday through Thursday from 9:00

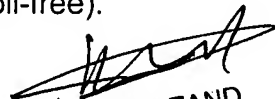a.m. to 4:00 p.m. and alternate Fridays from 9:00 a.m. to 3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number

for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

KAMBIZ ZAND
PRIMARY EXAMINER

3/29/07